

GLOSSARY

Abandonment—Termination of fluid minerals operations, production operations, removal of facilities, plugging of the well bore, and reclamation of surface disturbances.

Affected Environment—Surface or subsurface resources (including social and economic elements) within or adjacent to a geographic area that potentially could be affected by gas development and production activities. The environment of the area to be affected or created by the alternatives under consideration. (40 CFR 1502.15)

A-weighted—A weighting function applied to the noise spectrum, which approximates the response of the human ear.

Alkalinity—Quantity and type of compounds in water that collectively cause a pH shift to alkalinity.

Allotment (Range)—A designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under management of an authorized agency.

Alluvial Plains—Floodplains produced by the filling of a valley bottom and consisting of fine mud, sand, or gravel.

Alternative—A combination of management prescriptions applied in specific amounts and locations to achieve a desired management emphasis as expressed in goals and objectives. One of a number of plans or projects proposed for decision-making.

Ambient (air)—The surrounding atmospheric conditions to which the general public has access.

Analysis Area—For this RMPA/EIS, refers to lands that overlie Federal fluid minerals, and exclude areas that are closed to leasing by statute and lands administered by surface management agencies other than BLM.

Animal Unit Months (AUM)—Amount of forage required to sustain a cow/calf unit (one cow and one calf) for one month.

Annular—Having the form of a ring; ring-shaped.

Application—A written request, petition, or offer to lease lands for the purpose of fluid minerals exploration and/or right-of-extraction.

Aquifer—A water-bearing layer of permeable rock, sand or gravel. A formation, group of formations, or part of a formation that contains sufficient saturated permeable material to conduct groundwater and yield large quantities of water to wells and springs.

Areas of Critical Environmental Concern (ACEC)—A BLM designation pertaining to areas where specific management attention is needed to protect and prevent irreparable damage to important historical, cultural, and scenic values, fish or wildlife resources, or other natural systems or processes, or to protect human life and safety from natural hazards.

Arroyo—A term applied in the arid and semiarid regions of the southwestern United States to the small, deep, flat-floored channel or gully of an ephemeral stream or of an intermittent stream usually with vertical or steeply cut banks of unconsolidated material at least 2 feet (60 centimeters) high; it is usually dry, but may be transformed into a temporary watercourse or short-lived torrent after heavy rainfall.

Aspect—The direction in which a slope faces.

Barite (BaSO₄)—A mineral used to increase the weight of the drilling mud.

Basin—A depressed area having no surface outlet (*topographic basin*); a physiographic feature or subsurface structure that is capable of collecting, storing, or discharging water by reason of its shape and the characteristics of its confining material (*water*); a depression in the earth's surface, the lowest part often filled by a lake or pond (*lake basin*); a part of a river or canal widened (*drainage, river, stream basin*)

Basin and Range—Topography characterized by a series of tilted fault block mountain ranges and broad intervening basins.

Basin and Range Physiographic Province—A province in the southwestern United States characterized by a series of tilted fault blocks forming longitudinal ridges or mountains and broad intervening basins.

Benthic—Of, pertaining to, or living in or on the bottom of a waterbody.

Bentonite—A naturally occurring clay used to keep the cuttings in suspension as they move up the bore hole.

Big Game—Large species of wildlife that are hunted, such as elk, deer, bighorn sheep, and pronghorn antelope.

Biodiversity—The diversity of living organisms considered at all levels of organization including genetics, species, and higher taxonomic levels, and the variety of habitats and ecosystems, as well as the processes occurring therein.

Biogenic Rock—An organic rock produced directly by the physiological activities of living organisms, either plant or animal; e.g., coral reefs, shelly limestone, pelagic ooze, coal, peat.

Bioherm—A mound-, dome-, lens-, or reef-like or otherwise circumscribed mass of rock built up by, and composed almost exclusively of, the remains of sedentary organisms (corals, algae, foraminifers, mollusks, gastropods, stromatopods) and enclosed or surrounded by rock of different lithology.

Blowout—An uncontrolled expulsion of gas, oil, or other fluids from a drilling well. A blowout occurs when formation pressure exceeds the pressure applied to it by the column of drilling fluid and when blowout prevention equipment is absent or fails.

Bored Crossing—A subterranean crossing of a road, railway, river, or other obstacle, by a pipeline, transmission line, or other transport system.

Bradenhead Testing—The bradenhead is the portion of the wellhead that is in communication with the annular volume between the surface casing and the next smaller casing string. Conceptually, if there is positive pressure at the bradenhead, this indicates that a casing leak or an inadequate cement job could exist on a well.

Brine—A highly saline solution.

Bureau of Indian Affairs—An agency of the Department of the Interior responsible for encouraging and assisting Indian people to manage their own affairs under the trust relationship to the Federal government; to facilitate, with the maximum involvement of Indian people, full development of their human and natural resource potential, and promote self-determination by using the skills and capabilities of Indian people in the direction and management of programs for their benefit.

Bureau of Land Management—An agency of the Department of the Interior responsible for managing most Federal government subsurface minerals. It has surface management responsibility for Federal lands designated under the Federal Land Policy and Management Act of 1976.

Cambrian—The oldest of the periods of the Paleozoic Era; also the system of strata deposited during that period.

Carbonaceous—Coaly; pertaining to, or composed largely of, carbon.

Casing—Steel pipes of varying diameter and weight, joined together by threads and couplings, "inserted" into the well bore for the purpose of supporting the walls of the well and preventing them from caving in. Surface casing is inserted from the ground surface to approximately 250 feet (76 metres), production casing is inserted to the total depth of the well (smaller diameter pipe than surface casing), cemented in place and latter perforated for production.

Casual Use—Activities that ordinarily lead to no significant disturbance of Federal lands, resources, or improvements.

Centralizer—A device secured around the casing at various intervals to center the casing in the hole and provide a uniform cement sheath around the casing.

Christmas Tree—An assemblage of valves, located at the top of casing, from which tubing in the well is suspended.

Clean Air Act—Federal legislation governing air pollution. Prevention of Significant Deterioration above legally established levels include the following:

Class I - minimal additional deterioration in air quality (certain national parks and wilderness areas).

Class II - moderate additional deterioration in air quality (most lands).

Class III - greater deterioration for planned maximum growth (industrial areas).

Coal—A readily combustible rock containing more than 50 percent weight and more than 70 percent by volume of carbonaceous material including inherent moisture, formed from compaction and induration of variously altered plant remains similar to those in peat. Differences in the kinds of plant materials (type), in degree of metamorphism (rank), and in the range of impurity (grade) are characteristic of coal and are used in classification.

Colluvium—A general term applied to loose and incoherent deposits, usually at the foot of a slope or cliff and brought there chiefly by gravity. Talus and cliff debris are included in such deposits.

Completion—The activities and methods to prepare a well for production. Includes installation of equipment for production from an oil or gas well.

Conditions of Approval—Conditions or provisions (requirements) under which an Application for a Permit to Drill or a Sundry Notice is approved.

Connate Water—Water entrapped in the interstices of a sedimentary rock at the time the rock was deposited.

Conspecific—Of or pertaining to the same species.

Controlled Surface Use (CSU)—A fluid minerals leasing constraint under which use and occupancy is allowed (unless restricted by another stipulation), but identified resource values require special operational limitations that may modify lease rights.

Corridor—For purposes of this environmental assessment, a wide strip of land within which a proposed linear facility could be located.

Council on Environmental Quality (CEQ)—An advisory council to the President of the United States established by the national Environmental Policy Act of 1969. It reviews Federal programs for their effect on the environment, conducts environmental studies, and advises the president on environmental matters.

Cow-Calf Livestock Operation—A livestock operation in which a base breeding herd of mother cows and bulls is maintained. The cows produce a calf crop each year, and the operation keeps some heifer calves from each calf crop for breeding herd replacements. The operation sells the rest of the calf crop between the ages of 6 and 12 months along with old or non-productive cows and bulls.

Critical Habitat—An area occupied by a threatened or endangered species “on which are found those physical and biological features (1) essential to the conservation of the species, and (2) which may require special management considerations or protection” (16 USC 1532 (5)(A)(I)1988). Unoccupied by suitable habitat for the threatened or endangered species is not automatically included unless such areas are essential for the conservation of the species (50 CFR 424.12(e)0.

Crucial Habitat—An area that is essential to the survival of any wildlife species sometime during its life cycle.

Cultural Resource Inventory Classes:

Class I - Inventory of existing data: A study of a defined area designed (1) to provide a narrative overview (cultural resource overview) derived from existing cultural resource information and (2) to provide a compilation of existing cultural resource site record data on which to base the development of the BLM's site record system.

Class III - An intensive field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a specified area. A Class III inventory is appropriate on small project areas, all areas to be disturbed, and primary cultural resource areas.

Cultural Resources—Remains of human activity, occupation, or endeavor, as reflected in districts, sites, buildings, objects, artifacts, ruins, works of art, architecture, and natural features important in human events.

Cumulative Impact—The impact on the environment that results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

Cuttings—Fragments of rock dislodged by the bit and brought to the surface in the drilling mud.

Debitage (cultural resources)—Waste flakes from tool-making activities.

Depth of Burial—The depth below the ground surface and/or thickness of overlying stratum over a particular rock unit of geologic interest. Coals buried at a depth of more than 4,000 feet do not have the flow capacity needed for economic methane gas development.

Depth to Coal Pay—The depth below the ground surface of a potential economic coal unit.

Desiccation—The removal of moisture; to become dried up.

Decision Area—Public land (BLM-administered) and private split-estate (i.e., private surface acreage overlying Federally owned fluid minerals) are referred to in this document as BLM's Decision Area.

Development Well—A well drilled within the known or proven productive area of an oil field with the expectation of producing oil or gas from the producing reservoir.

Dewatering—The act of removing water.

Directional Drilling—The intentional deviation of a wellbore from vertical to reach subsurface areas off to one side from the drilling site.

Discretionary Closure—Those lands where the BLM has determined that fluid minerals leasing, even with the most restrictive stipulations, would not adequately protect other resources, values, or land uses.

Disposal Well—A well into which produced water from other wells is injected into an underground formation for disposal.

Distribution Line—An electric power line operating at a voltage of less than 69 kilovolts.

Diurnal—Describes a cyclic event recurring daily; or the nature or habit of an organism to be active during daylight hours.

Diversity—The relative abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area.

Drilling Fluids—The circulating fluid used to bring cuttings out of the wellbore, cool the drill bit, provide hole stability, and pressure control.

Drilling Rig—The derrick, draw-works, and attendant surface equipment of a drilling or workover unit.

Drilling—The operation of boring a hole in the earth, usually for the purpose of finding and removing subsurface formation fluids such as oil and gas.

Dry Hole—Any well incapable of producing oil or gas in commercial quantities. A dry hole may produce water, gas, or even oil, but not enough to justify production.

Easement—A right afforded a person or agency to make limited use of another's real property for access or other purposes.

Embargo—A restriction imposed on commerce by law; especially a prohibition of trade in a particular commodity.

Emission—Effluent discharge into the atmosphere, usually specified by mass per unit time.

Endangered Species—Any animal or plant species in danger of extinction throughout all or a significant portion of its range.

Enhanced Recovery—The use of artificial means to increase the amount of hydrocarbons that can be recovered from a reservoir. A reservoir depleted by normal extraction usually can be restored by secondary or tertiary methods of enhanced recovery.

Environmental Impact Statement (EIS)—A document prepared to analyze the impacts on the environment of a proposed action and released to the public for review and comment. An EIS must meet the requirements of NEPA, CEQ, and the directives of the agency responsible for the proposed action.

Erosion—The group of processes whereby earthy or rocky material is worn away by natural sources such as wind, water, or ice and removed from any part of the earth's surface.

Ephemeral Stream—A stream that flows only in direct response to precipitation.

Evapotranspiration—Loss of water from a land area through transpiration of plants and evaporation from the soil.

Exploration Well—A well drilled in the area where there is no oil or gas production (also known as wildcat well).

Exsolve—From exsolution, the process whereby an initially homogeneous solid solution separates into two (or possibly more) distinct crystalline phases without addition or removal of material to or from the system; i.e., without change in the bulk composition. It generally, though not necessarily, occurs on cooling. Synonym: *unmixing*.

Eyrie—The nest of birds of prey.

Fan—An accumulation of debris brought down by a stream descending through a steep ravine and debouching in the plain beneath, where the detrital material spreads out in the shape of a fan, forming a section of a very low cone.

Federal Candidate Species—Sensitive wildlife species currently under consideration for inclusion to the list of Federal threatened or endangered species. Species are placed in one of the following categories:

1. Available data on biological vulnerability and threat(s) support listing, but additional data are needed on precise habitat and/or critical habitat boundaries.
2. Available data indicate that listing may be appropriate, but substantial data on vulnerability and threats are not available to support immediate listing.
- 3A. Probably extinct.
- 3B. Taxa do not meet the USFWS definition of species; taxa may be re-evaluated in the future.
- 3C. Taxa that have proven to be more abundant or widespread than was previously believed and/or those that are not subject to any identifiable threat; further research may indicate re-evaluation to Category 1 or 2.

Federal Land Policy and Management Act of 1976 (FLPMA)—Public Law 94-570 signed by the President of the United States on October 21, 1976. Established public land policy for management of lands administered by the Bureau of Land Management (BLM). FLPMA specifies several key directions for the BLM, notably (1) management on the basis of multiple use and sustained yield, (2) land plans prepared to guide management actions, (3) public land management for the protection, development, and enhancement of resources, (4) public land retention in Federal ownership, and (5) public participation in reaching management decisions.

Federal Listed Species—Animal or plant species listed by the USFWS as threatened or endangered.

Fiduciary—Held in trust.

Flare—An arrangement of piping and a burner to dispose of surplus combustible vapors, usually situated around a gasoline plant, refinery, or producing well.

Floodplain—The flat ground along a stream that is covered by water when the stream overflows its banks at flood stages.

Fluid Minerals—In this case, oil, gas, and geothermal resources.

Forage—All browse and herbaceous foods available to grazing animals, which may be grazed or harvested for feeding.

Foreground View—The landscape area visible to an observer within a mile.

Formation—A body of rock identified by lithic characteristics and stratigraphic position; it is prevailingly, but not necessarily tabular, and is mappable at the earth's surface or traceable in the subsurface (NACSN, 2984, Art. 24).

Fossil—Any remains, trace, or imprint of a plant or animal that has been preserved by natural processes in the earth's crust since some past geologic time.

Fractured—Fissured, broken, or cracked. See also Hydraulic Fracturing.

Fragile Soil—A soil that is especially vulnerable to erosion or deterioration due to its physical characteristics and/or location. Disturbance to the surface or the vegetative cover can initiate a rapid cycle of loss and destruction of soil material, structure, and ability to sustain a biotic community.

Fragmentation—See Habitat Fragmentation.

Free Market—An economic market operating by free competition.

Fugitive Dust—Airborne particles emitted from any source other than through a stack or vent.

Game Management Unit (GMU)—Colorado is divided into approximately 150 geographic areas called Game Management Units. Game species are managed on a unit specific basis.

Geophysics—Study of the earth by quantitative physical methods.

Graben—Fault block valley; elongated, depressed crustal block bounded by faults on its long side.

Habitat—A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

Habitat Fragmentation—The disruption (by division) of extensive habitats into smaller habitat patches. The effects of habitat fragmentation include loss of habitat area and the creation of smaller, more isolated patches of remaining habitat.

Habitat Management Plan (HMP)—A written and officially approved plan for a specific geographical area of public land that identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

Habitat Type—An aggregation of all land areas potentially capable of producing similar plant communities at climax.

Herpetofauna—Reptiles and amphibians.

Highest and Best Use—Use of a resource (i.e., property) that maximizes its potential.

Historic—Archaeological and archivally known sites related to the activities of non-native peoples, whether they be of Euro-American, Afro-American or Asian-American origin, in the period after the European discovery of the New World (ca. A.D. 1492).

Hummocky—Like a hummock, full of hummocks (a low, rounded hill, knoll, hillock; a tract of wooded land higher than a nearby swamp or marsh).

Hydraulic Fracturing—A method of stimulating production by increasing the permeability of the producing formation.

Hydric Soils—Saturated soils.

Hydrocarbons—Organic compounds of hydrogen and carbon, whose densities, boiling points, and freezing points increase as their molecular weights increase. Although composed mostly of carbon and hydrogen, hydrocarbons exist in a great variety of compounds, owing to the strong affinity of the carbon atom for other atoms and itself. The smallest molecules are gaseous; the largest are solids. Petroleum is a mixture of many different hydrocarbons.

Hydrogeologically Connected—The connection of two or more hydrologic systems, usually refers to separate aquifers in which water can pass and exchange with other aquifers.

Hydrophytic—Water-loving; ability to grow in water or saturated soils.

Hydrostatic Test—The testing of pipeline integrity by closing of all openings and pumping water into the pipe at a pressure greater than the normal operating pressure to determine whether or not leaks are present.

Immigrant—Individual who moves into the project area from another part of the country.

Impact—A modification of the existing environment caused by an action (such as construction or operation of facilities).

Incised Channels—Deeply and sharply cut stream channels.

Increments—Maximum allowable increases over legally established baseline concentrations of pollutants covered by the Prevention of Significant Deterioration (PSD) provisions designated as Class I, II, and III areas.

Indian Mineral Estate—A mineral estate owned by the Federal government and held in trust for the Indian people. The Bureau of Indian Affairs and Bureau of Land Management, as agents of the Secretary of the Interior, have the responsibility for administering the leasing and development of oil and gas resources in such a case. However, under the auspices of the Indian Self Determination Act of 1968 and Indian Mineral Development Act of 1982, Indian people may take a leadership role in the management of their mineral resources.

Indicator Species—A species of animal or plant whose presence is a fairly certain indication of a particular set of environmental conditions. Indicator species serve to show the effects of development actions on the environment.

Indirect Impacts—Secondary effects that occur in locations other than the initial action or later in time.

Indurated—Said of a compact rock or soil hardened by the action of pressure, cementation, and especially heat. Also, said of an impure, hard, slately variety of talc.

Infrastructure—The facilities, services, and equipment needed for a community to function including roads, sewers, water lines, police and fire protection, and schools.

Injection—The forcing, under abnormal pressure, of material (downward from above, upward from below, or laterally) into a pre-existing deposit or rock, either along some plane or weakness or into a pre-existing crack or fissure.

Injection Well—A well used to inject fluids into an underground formation to increase reservoir pressure.

Insignificant or Nonsignificant Impacts—Impacts that are perceptible or measurable relative to those occurring naturally or due to other actions, and would not exceed significance criteria.

Intermittent Stream—A stream or reach of a stream that is below the local water table for at least some part of the year.

Joint Patterns—Patterns of fractures in rock, generally vertical or transverse to bedding, along which no appreciable movement has occurred.

Jurisdiction—The legal right to control or regulate use of a transportation facility. Jurisdiction requires authority, but not necessarily ownership.

K-factor—Soil erodibility factor.

Lacustrine—Of or pertaining to a lake.

Landscape—An area composed of interacting ecosystems that are repeated because of geology, landform, soils, climate, biota, and human influences throughout the area. Landscapes are generally of a size, shape, and pattern which is determined by interacting ecosystems.

Landscape Character—Particular attributes, qualities, and traits of a landscape that give it an image and make it identifiable or unique.

Landscape Setting—The context and environment in which a landscape is set; a landscape backdrop.

Leasable Minerals—Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920. They include coal, phosphate, asphalt, sulphur, potassium, and sodium minerals, and oil, gas, and geothermal.

Lease—(1) A legal document that conveys to an operator the right to drill for oil and gas; (2) the tract of land, on which a lease has been obtained, where producing wells and production equipment are located.

Lease Notice—Provides more detailed information concerning limitations that already exist in law, lease terms, regulations, and operational orders. A Lease Notice also addresses special items the lessee would consider when planning operations, but does not impose new or additional restrictions.

Lease Stipulation—A modification of the terms and conditions on a standard lease form at the time of the lease sale.

Lenticular—Shaped approximately like a double convex lens.

Level of Service (LOS)—In transportation studies, a qualitative measure of traffic flow along a given road considering a variety of factors, including speed and travel time, traffic interruptions and freedom to maneuver. Levels of service are designated “A” through “F”; “A” being a free-flow condition with low volumes at high speeds and “F” being a congested condition of low speeds and stop-and-go traffic. Intermediate levels describe conditions between these extremes. A level of service below “C” involves unstable to forced traffic flow in which a driver's freedom to select a speed is restricted and in which traffic stoppages cause congestion.

Liquefaction—A change in the phase of a substance to the liquid state; usually a change from the gaseous to the liquid state, especially of a substance that is a gas at normal pressure and temperature.

Lithic Scatter—A scatter of chipped stone materials, which may include fragments, flakes, or stone tools.

Lithology—The physical characteristics of a rock, generally as determined megascopically or with the aid of a low-power magnifier.

Logging Tool—Electric tools that are able to be lowered down a well bore by wire cable and are capable of taking measurements of the physical properties of the rock formations downhole (i.e., resistivity, self-potential, gamma-ray, intensity, or velocity). The data is recorded and displayed on well logs that aid in defining physical rock characteristics such as lithology, porosity, pore geometry, and permeability.

Management Indicator Species—Those species that are commonly hunted or whose habitat requirements and population changes are believed to indicate effects of management activities on a broader group of wildlife species in the ecological community.

Management Situation Analysis—Assessment of the current management direction. It includes a consolidation of existing data needed to analyze and resolve identified issues, a description of current BLM management guidance, and a discussion of existing problems and opportunities for solving them.

Middleground View—One of the distance zones of a landscape being viewed. This zone extends from the limit of the foreground to three to five miles from the observer.

Migration (oil and gas)—the movement of liquid and gaseous hydrocarbons from their source or generating beds, through permeable formations into reservoir rocks.

Mineral Estate (Mineral Rights) – The ownership of minerals, including rights necessary for access, exploration, development, mining, ore dressing, and transportation operations.

Mineral Reserves—Known mineral deposits that are recoverable under present conditions but are as yet undeveloped.

Mineral Rights—Mineral rights outstanding are third-party rights, an interest in minerals not owned by the person or party conveying the land to the United States. It is an exception in a deed that is the result of prior conveyance separating title of certain minerals from the surface estate.

Reserved mineral rights are the retention of ownership of all or part of the mineral rights by a person or party conveying land to the United States. Conditions for the exercising of these rights have been defined in the Secretary of the Interior’s “Rules and Regulations to Govern Exercising of Mineral Rights Reserved Conveyance to the United States” attached to and made a part of deeds reserving mineral rights.

Mitigation—The abatement or reduction of an impact on the environment by (1) avoiding a certain action or parts of an action, (2) employing certain construction measures to limit the degree of impact, (3) restoring an area to preconstruction conditions, (4) preserving or maintaining an area throughout the life of a project, or (5) replacing or providing substitute resources to the environment or (6) gathering archaeological and paleontological data before disturbance.

Modification—A fundamental change in the provisions of a lease stipulation, either temporarily or for the term of the lease. A modification may, therefore, include an exemption from or alteration to a stipulated requirement. Depending on the specific modification, the stipulation may or may not apply to all other sites within the leasehold to which restrictive stipulation applies.

Multiple Use—Multiple use as defined by the Multiple Use—Sustained Yield Act 1960 means the management of all the various renewable surface resources so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be

used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

National Ambient Air Quality Standards (NAAQS)—The allowable concentrations of air pollutants in the air specified by the Federal government. The air quality standards are divided into primary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public health) and secondary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public welfare) from any unknown or expected adverse effects of air pollutants.

National Environmental Policy Act of 1969 (NEPA)—An Act that encourages productive and enjoyable harmony between man and his environment and promotes efforts to prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; enriches the understanding of the ecological systems and natural resources important to the Nation, and establishes the Council on Environmental Quality.

National Natural Landmarks—Sites designated by the Secretary of the Interior as containing the best representative examples of geologic features and natural communities composing the nation's natural history. The purpose of the designation is to encourage preservation of such sites through well-informed management and use, and consideration of these sites in public and private land use planning. Designation has no legal effect on land ownership, use, or management (National Park Service, not date, National Natural Landmark Designation).

National Register of Historic Places (National Register, NRHP)—A listing of architectural, historical, archaeological, and cultural sites of local, state, or national significance. The list of sites was established by the Historic Preservation Act of 1966 and is maintained by the National Park Service.

Negligible Impact—Impact that is small in magnitude and importance and are difficult or impossible to quantify relative to those occurring naturally or due to other actions.

Nondiscretionary Closure—Those lands that must be closed to leasing for reasons beyond the discretion of the BLM. These are lands specially precluded from fluid minerals leasing by law, regulations, Secretarial or Executive Order, or that otherwise have been closed formally by decisions reached beyond the scope of the BLM.

No Surface Disturbance—In general, this applies to an area where an activity is allowed so long as it does not disturb the surface.

No Surface Occupancy (NSO)—A fluid minerals leasing constraint that prohibits occupancy or disturbance on all or part of the lease surface to protect special values or uses. Lessees may exploit the fluid mineral resources under the leases restricted by this constraint through use of directional drilling from sites outside the NSO area.

Non-Range—Areas that are not suitable for livestock grazing due to low forage production, steep slopes, dense brush, or other reasons.

Notice of Review Species—A species that is being considered as a candidate for listing as either endangered or threatened under the Endangered Species Act of 1973, as amended.

Notice to Lessees (NTL)—A written notice issued by the BLM to implement regulations and operating orders, and serve as instructions on a specific item(s) of importance within a state, district, or area.

Noxious Weed—An undesirable weed species that can crowd out more desirable species.

Off-Highway Vehicle (OHV)—A vehicle (including four-wheel drive, trail bikes, all-terrain vehicles, and snowmobiles but excluding helicopters, fixed-wing aircraft, and boats) capable of traveling off road over land, water, ice, snow, sand, marshes, and other terrain.

Off-Road Vehicle (ORV) Designations

Closed – Applies to areas and trails where the use of ORVs is permanently or temporarily prohibited. Emergency use of vehicles is allowed.

Limited – Applies to areas and trails where the use of ORVs is subject to restrictions such as limiting the number or types of vehicles allowed, dates and times of use (seasonal restrictions), limiting use to existing roads and trails, or limiting use to designated roads or trails. Under the designated roads and trails designation, use is allowed only on roads and trails that are signed for use. Combinations of restrictions, such as limiting use to certain types of vehicles during certain times of the year, are possible.

Open – Applies to areas and trails where ORVs may be operated subject to operating regulations and vehicle standards set forth in BLM Manuals 8341 and 8343.

One-Hundred-Year Flood—A hydrologic event with a magnitude that has a recurrence interval of 100 years.

Operating Rights (working interest)—Any interest held in a lease with the right to explore for, develop, and produce leased substances.

Operator—Any person who has taken formal responsibility for the operations conducted on the leased lands.

Paleontology—A science dealing with the life of past geological periods as known from fossil remains.

Palustrine—A system of wetlands that includes all non-tidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens.

Particulate Matter (PM₁₀)—Particulate matter less than 10 microns in effective diameter (also called Fine Particulate Matter).

Patent—A grant made to an individual or group conveying fee simple title to public lands.

Piedmont—Lying or formed at the base of mountains.

Perennial Stream—A stream receiving water from both surfaces and underground sources that flows throughout the entire year.

Perforations—Holes that are made through the casing and cement, and extend some distance into the production zone.

pH—A numeric value that gives the relative acidity or alkalinity of a substance on a 0 to 14 scale with the neutral point at 7. Values lower than 7 show the presence of acids, and values greater than 7 show the presence of alkalis.

Physiognomic Physiographic Province—A region all parts of which are similar in geologic structure and climate and which has consequently had a unified geomorphic history; a region whose pattern of relief features or landforms differs significantly from that of adjacent regions.

Plan of Development—A mandatory plan, developed by an applicant of a mining operation or construction project, that specifies the techniques and measures to be used during construction and operation of all project facilities on public land. The plan is submitted for approval to the appropriate Federal agency before any construction begins.

Planning Area—A geographical area for which land use and resource management plans are developed and maintained.

Plug—Any object or device that serves to block a hole or passageway, as a cement plug in a borehole.

Prehistoric—Archaeological sites resulting from the activities of aboriginal peoples native to this region, and because dating is often difficult, extending up to the reservation era (ca. A.D. 1868).

Prevention of Significant Deterioration (PSD)—A regulatory program based not on the absolute levels of pollution allowable in the atmosphere but on the amount by which a legally defined baseline condition will be allowed to deteriorate in a given area. Under this program, geographic areas are divided into three classes, each allowing different increases in nitrogen dioxide, particulate matter, and sulfur dioxide concentrations.

Primary Range—Areas where the majority of livestock grazing is concentrated, due to high forage production, easy accessibility, nearby water sources, or other reasons.

Prime Farmland—Land that is best suited for producing food, feed, forage, fiber, and oilseed crops. The inventory of prime agricultural land is maintained by the USDA Natural Resources Conservation Service, (formerly the Soil Conservation Service).

Primitive—Refers to areas that are almost completely free of management controls, are located more than three miles from the nearest point of motor vehicle access, and have unmodified landscapes and little evidence of other people.

Production Well—A well drilled in a known field that produces oil or gas.

Proposed Action—Construction activities, alignments, and other activities proposed by the applicant.

Proppants—Sandgrains, aluminum pellets, glass beads, or similar materials used in hydraulic fracturing. When injected into the production formation, these materials leave channels allowing gas to flow through them into the well.

Public Land—Any land and interest in land (outside Alaska) owned by the United States and administered by the Secretary of the Interior through the BLM.

Quaternary—The younger of the two geologic periods or systems in the Cenozoic Era.

Rangeland—Land used for grazing by livestock and big game animals on which vegetation is dominated by grasses, grass-like plants, forbs, or shrubs.

Raptor—Bird of prey with sharp talons and strongly curved beak; e.g., hawk, owl, vulture, eagle.

Rare or Sensitive Species—Species that have no specific legal protection under the Endangered Species Act as threatened or endangered species, but are of special concern to agencies and the professional biologic community due to low populations, limited distributions, ongoing population decline, and/or human or natural threats to their continued existence.

Reasonable Foreseeable Development Scenario—The prediction of the type and amount of oil and gas activity that would occur in a given area. The prediction is based on geologic factors, past history of drilling, projected demand for oil and gas, and industry interest.

Reciprocation—A technique performed while cementing, whereby casing is moved up and down the wellbore in order to move the cement slurry uniformly around the wellbore to eliminate channeling and provide an effective cement bond on the casing and formation walls.

Reclamation—The process of converting disturbed land to its former use or other productive uses.

Recreation and Public Purposes Act (R&PP)—This act authorizes the Secretary of the Interior to lease or convey public lands for recreational and public purposes, under specified conditions, to states or their political subdivisions and to nonprofit corporations and associations.

Resource Management Plan (RMP)—A land use plan that establishes land use allocations, multiple-use guidelines, and management objectives for a given planning area. The RMP planning system has been used by the BLM since 1980.

Record of Decision—A document separate from, but associated with, an environmental impact statement that publicly and officially discloses the responsible official's decision on the proposed action.

Reserve Pit—(1) Usually an excavated pit that may be lined with plastic that holds drill cuttings and waste mud. (2) Term for the pit that holds the drilling mud.

Reservoir (oil and gas)—A naturally occurring, underground container of oil and gas, usually formed by deformation of strata and changes in porosity.

Rift—A system of fractures (faults) in the earth's crust and the associated valley or depression.

Riparian—Situated on or pertaining to the bank of a river, stream, or other body of water. Normally used to refer to the plants of all types that grow along, around, or in wet areas.

Riverine—A system of wetlands that includes all wetland and deep-water habitats contained within a channel that lacks trees, shrubs, persistent emergents, and emergent mosses or lichens.

Roadless—Refers to the absence of roads constructed and maintained by mechanical means.

Roads—Vehicle routes that are improved and maintained by mechanical means to ensure relatively regular and continuous use. (A way maintained strictly by the passage of vehicles does not constitute a road.)

Rotation—A technique performed while cementing, whereby casing is rotated in the hole in order to move the cement slurry uniformly around the casing to eliminate channeling and provide an effective cement bond on the casing and formation walls.

Salinity—A measure of the amount of dissolved salts in water.

San Juan Basin—A large geologic basin located in northwestern New Mexico and southwestern Colorado that has been extensively drilled for oil and gas and is reportedly the second largest gas-producing basin in the continental United States. (A summary of the mineral development history is provided in Chapter 1.)

Saline water—Water containing high concentrations of salt (see also brine).

Scoping—A term used to identify the process for determining the scope of issues related to a proposed action and for identifying significant issues to be addressed in an EIS.

Scraper Trap—A device on the pipeline used to receive a scraper pig or inside pipe inspection pig.

Scratchers—A device fastened to the outside of the casing that removes drilling mud from the wall of the hole to condition the hole for cementing. By rotating or moving the casing up and down as it is being inserted into the hole, the scratcher, formed of stiff wire, removes drilling mud so that cement can bond solidly to the formation wall.

Screened—The depth at which a well screen has been placed on a well. A well screen allows fluids to enter the well casing.

Secondary Range—Areas where livestock grazing occurs but at lower intensities than primary range, due to less favorable conditions of forage production, terrain, distance from water source, or other factors.

Secondary Succession—The process by which ecosystems recover toward pre-existing conditions after removal of a disturbance, such as the recovery process of a forest after a fire.

Sediment—Soil or mineral transported by moving water, wind, gravity, or glaciers, and deposited in streams or other bodies of water, or on land.

Sediment Yield—The amount of sediment produced in a watershed, expressed in tons, acre feet, or cubic yards, of sediment per unit of drainage area per year.

Sedimentary Rock—Rock resulting from consolidation of loose sediment that has accumulated in layers.

Selenium—A chemical element of the sulfur group.

Semiprimitive—Refers to areas that have very few management controls, are located between 0.5 mile (800 meters) and 3 miles from the nearest point of motor vehicle access (excluding four-wheel drive roads and trails), and have mostly natural landscapes and some evidence of other people.

Sensitive Plant Species—Those plant or animal species susceptible or vulnerable to activity impacts or habitat alterations.

Sensitivity Levels (visual resources)—A measure of people's concern for scenic quality.

Shut-in—An oil and gas well that is capable of production but is temporarily not producing.

Significant—An effect that is analyzed in the context of the proposed action to determine the degree or magnitude of importance of the effect, either beneficial or adverse. The degree of significance can be related to other actions with individually insignificant but cumulatively significant impacts.

Significance Criteria—Criteria identified for specific resources used to determine whether or not impacts would be significant.

Slope—The degree of deviation of a surface from the horizontal.

Slug Tests—A test used to calculate hydraulic conductivity, transmissivity, and the storage coefficient (i.e. the wells potential yield).

Soil Horizon—A distinct layer of soil, approximately parallel to the land surface, and different from adjacent, genetically related layers in physical, chemical, and biological properties or characteristics.

Soil Productivity—The capacity of a soil to produce a plant or sequence of plants under a system of management.

Soil Series—A group of soils having genetic horizons (layers) that, except for texture of the surface layer, have similar characteristics and arrangement in profile.

Soil Texture—The relative proportions of sand, silt, and clay particles in a mass of soil. Basic textural classes, in order of increasing proportions of fine particles, are: sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, and clay.

Split Estate—Refers to land where the mineral rights and the surface rights are owned by different parties. Owners of the mineral rights generally have a superior right.

Standard Lease Terms and Conditions—Areas may be open to leasing with no specific management decisions defined in a Resource Management Plan; however, these areas are subject to lease terms and conditions as defined on the lease form (Form 3100-11, Offer to Lease and Lease for Oil and Gas; and Form 3200-24, Offer to Lease and Lease for Geothermal Resources).

Stipulations—Requirements that are part of the terms of a mineral lease. Some stipulations are standard on all Federal leases. Other stipulations may be applied to the lease at the discretion of the surface management agency to protect valuable surface resources and uses.

Storage Coefficient—The volume of water released from storage in a vertical column of 1 square foot when the water table or other piezometric surface declines 1 foot.

Stratigraphy—The arrangement of strata, especially as to geographic position and chronologic order of sequence.

Structural Trap—One in which entrapment results from folding, faulting, or a combination of both.

Suitability—As used in the Wilderness Act and the Federal Land Policy and Management Act, refers to a recommendation by the Secretary of the Interior or the Secretary of Agriculture that certain Federal lands satisfy the definition of wilderness in the Wilderness Act. These lands have been found appropriate for designation as wilderness on the basis of an analysis of their existing and potential uses.

Sundry Notice—Standard form to notify of or propose change of approved well operations subsequent to an Application for Permit to Drill in accordance with 43 CFR 3162.3-2 .

Surface Management Agency—Any agency, other than the BLM, with jurisdiction over the surface overlying Federal minerals.

Sustainability—The ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time.

Sustained Yield—The achievement and maintenance, in perpetuity, of a high-level annual or regular periodic output of the various renewable resources on public lands consistent with multiple use.

Syncline—A fold of stratified rock inclining upward in opposite directions from both sides of its axis (opposed to anticline).

Tertiary—The older of the two geologic periods comprising the Cenozoic Era; also the system of strata deposited during that period.

Thermogenic—Of or pertaining to the rise in temperature in a body from reactions in that body, as by oxidation, or the decay of radioactive elements.

Threatened or Endangered Species—Animal or plant species that are listed under the Federal Endangered Species Act of 1973, as amended (federally listed), or under the Colorado or New Mexico Endangered Species Act (state listed).

Threatened Species—Any plant or animal species likely to become endangered within the foreseeable future throughout all or part of its range.

Thrust Fault—A reverse fault that is characterized by a low angle of inclination with reference to a horizontal plane.

Timing Limitation (Seasonal Restriction)—A fluid minerals leasing constraint that prohibits surface use during specified time periods to protect identified resource values. The constraint does not apply to the operation and maintenance of production facilities unless analysis demonstrates that such constraints are needed and that less stringent, project- specific constraints would be insufficient.

Toe-slope—The most distant part of a landslide; the downslope edge of a landslide or slump.

Total Dissolved Solids—A term that describes the quantity of dissolved material in a sample of material.

Total Suspended Particulates (TSP)—All particulate matter, typically less than 70 microns in effective diameter.

Total Suspended Solids—A term that describes the quantity of solid material in a sample of material.

Transmissivity—The rate at which water is transmitted through a unit width of aquifer under a hydraulic gradient.

Trap—A body of reservoir rock completely surrounded by impervious rock; a closed reservoir.

Turbolator—A type of centralizer that induces turbulent flow for better drilling mud displacement and cement sheath placement.

Unionized Ammonia—A species of nitrogen that is toxic to aquatic life.

Utilization (rangeland)—The proportion of the current year's forage production that is consumed or destroyed by grazing animals. Utilization is usually expressed as a percentage.

Vadose Zone—Zone of aeration.

Valid Existing Rights—Legal interests that attach a land or mineral estate and cannot be divested from the estate until those interests expire or are relinquished.

Vandalism—Willful or malicious destruction or defacement of public property; e.g., cultural or paleontological resources.

Vegetation Manipulation—Planned alteration of vegetation communities through use of prescribed fire, plowing, herbicide spraying, or other means to gain desired changes in forage availability or wildlife cover.

Vegetation Type—A plant community with distinguishable characteristics described by the dominant vegetation present.

Vent—An opening in a vessel, line, or pump to permit the escape of air or gas.

Visual Resources—the visible physical features of a landscape (topography, water, vegetation, animals, structures, and other features) that constitute the scenery of an area.

Visual Resource Management (VRM)—The inventory and planning actions taken to identify visual resource values and to establish objectives for managing those values. Also, management actions taken to achieve the established objectives.

Visual Resource Management Classes—VRM classes identify the degree of acceptable visual change within a particular landscape. A classification is assigned to public lands based on guidelines established for scenic quality, visual sensitivity, and visibility.

VRM Class I – This classification preserves the existing characteristic landscape and allows for natural ecological changes only. Includes Congressionally authorized areas (wilderness) and areas approved through an RMP where landscape modification activities should be restricted.

VRM Class II – This classification retains the existing characteristic landscape. The level of change in any of the basic landscape elements (form, line, color, texture) due to management activities should be low and not evident.

VRM Class III – This classification partially retains the existing characteristic landscape. The level of change in any of the basic landscape elements due to management activities may be moderate and evident.

VRM Class IV – this classification applies to areas where the characteristic landscape has been so disturbed that rehabilitation is needed. Generally considered an interim short-term classification until rehabilitation or enhancement is completed.

Visual Sensitivity—Visual sensitivity levels are a measure of public concern for scenic quality and existing or proposed visual change.

Vugo—(Petrology) A small cavity in a vein or in rock, usually lined with crystals of a different mineral composition from the enclosing rock. (Oil) A term used in petroleum geology for an opening in a rock, from the size of a small pea upwards.

Waiver—Permanent exemption from a lease stipulation. The stipulation no longer applies anywhere within the leasehold.

Water Table—The surface in a groundwater body where the water pressure is atmospheric. It is the level at which water stands in a well that penetrates the water body just far enough to hold standing water.

Wetland—Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. BLM Manual 1737, *Riparian-Wetland Area Management*, includes marshes, shallow swamps, lakeshores, bogs, muskegs, wet meadows, estuaries, and riparian areas as wetlands.

Wilderness, Wilderness Area—An area formally designated by Congress as a part of the National Wilderness preservation System.

Wilderness Characteristics—Qualities identified by Congress in the Wilderness Act of 1964 including size; naturalness; outstanding opportunities for solitude or a primitive and unconfined type of recreation; and supplemental values such as geological, archaeological, historical, ecological, scenic, or other features.

Wilderness Management Policy—The policy that describes the general objectives, policies, and specific activity guidance applicable to all designated BLM wilderness areas. Specific management objectives, requirements, and decisions that implement administrative practices and visitor activities in individual wilderness areas are developed and described in a wilderness management plan for each unit.

Wilderness Study Area (WSA)—An area determined to have wilderness characteristics as described in section 603 of the Federal Land Policy and Management Act and Section 2C of the Wilderness Act of 1964 (78 Stat. 891). WSAs are subject to interdisciplinary analysis through the BLM's land use planning system and public comment to determine their wilderness suitability. Suitable areas are recommended to the President and Congress for designation as wilderness.

Withdrawal—An action that restricts the use of public land and segregates it from the operation of some or all of the public land and mineral law. Withdrawals also are used to transfer jurisdiction of management of public lands to other Federal agencies.

Work Force—The total number of workers on a specific project or group of projects. The work force also is referred to as direct employment and primary employment.

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